

Graduate job market prospects hold up

by Paul Fletcher

Graduate students are escaping the worst effects of rising unemployment and recession, a conference of employers and careers advisers in Cambridge was told this week.

About 4.4 per cent of all graduates (2,682) were out of work at the end of 1979, six months after entering the job market. The "one" rate is thought to be much lower, well below the national rate of 7.8 per cent.

It will be tougher for graduates this year with most employers particularly the public sector pruning recruitment. But jobs will still be easier to find than for school leavers and those with lower qualifications. Personality, ability to work with others, and numeracy skills greatly improve the chance of a job.

Unusually one reason for the buoyancy of the graduate market is the need for accountancy and management to maintain the run-down of firms and creation of redundancies.

Mr Anthony Ruben, chairman of the Association of Graduate Careers Advisory Services (AGCAS), said: "Higher education will not guarantee anybody a particular job but there is no doubt it will improve your chance of a job."

"You can have definite career aims but it helps if you have a flexible attitude towards jobs."

He said industry had reestablished confidence among graduates that it will continue to recruit consistently.

The conference, at King's College, was attended by representatives from 150 companies and sponsored by the Standing Conference of Employers of Graduates (SCOG).

Both employers and graduates are keen to dispel fears that graduate employment has dropped off as suggested in recent government reports and by the offer of £1,000 made by an Essex graduate to anybody who found him a job.

They are still concerned at serious imbalances in supply and demand in the graduate market. They want science and arts graduates in particular to learn the importance of acquiring skills such as numeracy or languages which help in securing jobs.

The graduate market is holding up, they say, because universities are producing a more rounded graduate, one with a broad range of skills and a high level of motivation and commitment to the future and not just to meet current needs.

It has doubled in the past 15 years, according to the conference, and is now a more rounded graduate, one with a broad range of skills and a high level of motivation and commitment to the future and not just to meet current needs.

This is partly because of tech-

nology which has changed the nature of the work.

Chartered accountancy has increased its intake of graduates by 15 per cent over last year.

Graduates are also being recruited as future middle and senior management. Firms that dropped off recruitment in the mid-1970s because of the oil crisis now say they regret the decision and are not keen to drop recruitment in the present recession.

But in some sectors like mechanical and electrical engineering there is a severe shortage of applicants. The General Electrical Company says it could absorb all 2,000 electrical engineers expected on the market this year.

Computer programming, sales work and financial jobs, all unaccounted for in the statistics, are also short of applicants. But biological sciences, social studies and arts jobs are in short supply.

● Oxfordshire careers advisers are taking a strictly neutral line and passing on without comment a Whitehall union's advice to the universities to dissuade their undergraduates to think about attaining for the higher levels of the Civil Service.

The appeal came from Mr John Ward, general secretary of the Association of First Division Civil Service, following the Cabinet's decision to offer the top echelons of public servants pay rises ranging from 8 to 14 per cent instead of the 19 to 30 per cent recommended by the Top Salaries Review Committee.

His letter has simply been placed on file at both universities, whose graduates last year made up 60 per cent of recruits to the civil service administrative grade, for students to take into account when making their choice.

Mr William Kitchman, secretary of the Cambridge University careers service, said: "I have told Mr Ward we do not consider it our job to persuade anybody to go into things—or to persuade people not to. We consider it our job to help students make rational choices for themselves by providing all the relevant facts."

Mr Thomas Shaw, secretary of the Oxford University Appointments Board, said: "Mr Kitchman's remarks are very helpful."

He did not believe Civil Service pay was a determining factor in students' career choices. They have an idea the pay is reasonable, but they join for a whole series of other reasons.

Mr Ward's appeal has come on top of this year's crop of potential recruits. The selection process for next year's intake will not begin until the autumn.

Leader, page 3



Mr Denis Doughty, the deputy librarian at St Andrews University, with one of the rare books which he has catalogued after five years of painstaking research. The books belong to Plummer's Abbey in Elgin and include some of the rarest volumes in Scotland. The catalogue is published by St Andrews University.

Youth unemployment figures may raise MSC cash demands

by Patricia Santuelli

The Manpower Services Commission is likely to ask the Government for a major increase in the funding of the Youth Opportunities Programme, in the light of the latest figures of youth unemployment for January 1981.

The commission announced this week when presenting its Review of the Second Year of Special Programmes, that mounting youth unemployment figures, which for July stood at 342,000, including those on YOP, made it unlikely that the present size of the programme would be sufficient for the future.

Mr Geoffrey Holland, director of the Special Programmes Division, said that the magnitude of the problem facing the country was clear. The prospects were daunting. "Merely to ram the school-leaver under the rug and the very much smaller undertaking to all young people who have been unemployed for 12 months or more will next year require a programme much larger than the present one."

However, the commission is to wait until September when it meets ministers to discuss its review of special programmes for the unemployed before making an estimate of the increase of around 30,000 more starts at a gross cost of between £18m to £30m. By that time it will have more exact figures of the numbers of unemployed youngsters—those who have not found or to whom found jobs or traineeship.

The commission is also planning to ask the Government for an increase in programmes for long-term unemployed whose numbers have risen dramatically and could reach 500,000 by 1982.

The commission is confident that the Government will grant an expansion of the programme, particularly in the light of forecasted figures of youth unemployment for January 1981—a month when unemployment is usually at its lowest peak of 350,000 or more, and 400,000 for January 1982.

This compares with a figure of 190,000 for the same period last year, so that the additional numbers we might need to help by next year could be 100,000 more than this year. Moreover, 1981 is the year of the school-leaver peak in England and Wales and is likely to be a year of peak unemployment too."

Mr Holland said: "An additional problem facing the commission is that young people are likely to stay in the programme longer and youngsters now coming into the programme are a much wider range of abilities than previously. The commission announced that for the first time some 25 per cent of its intake had O level. A level, up to now the majority of young people had either no qualifications or just CSEs. One advantage arising from this problem is that it may enable the commission to develop a programme of systematic education and training which it has sought since the inception of YOP."

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Labour plan 'would attack independence'

by John O'Leary

The withdrawal of public money from students who attended outside the state system is the option contained in Labour Party's policy document on higher education, which was published this week.

But the 70-page report, Schools, contends that the proposal would attack the principle of the independence of the universities as a condition of the schools.

Although it is thought to make state schooling a condition of support in further education, there is recognition that the proposal would reduce the independence of young people who have reached the age of 16. They would be penalized for parents' decisions.

The policy, which has been subject to criticism from a range of sources, is also said to be a "straw man" for Labour's opponents, who are unlikely to enter higher education, let alone do so without financial barriers.

No objection is raised to further proposals to equalize further education between schools and colleges by closing classed scholarships, which are expected to select applicants on a more equitable basis than the same basis as all other schools and give pupils the same "a more equitable basis of entry."

Under the new plan, the of entrants from private schools and colleges would be reduced. In Labour's programme is dropped, its onerous maintenance would no longer be an "unpleasant" burden.

An education secretary, Mr Mark Carlisle, said the Government was not a question of extra Government cash to meet the award. But Prime Minister Mrs Margaret Thatcher, who was forced to concede defeat in Cabinet over her inclination to reduce the arbitration award, is apparently determined that teachers and lecturers must accept little better than frozen pay increases in the next pay round.

And this is bound to lead to a continuing erosion of the relative pay position established by the House of Commons in 1975, the Education Committee earlier this year.

The 70,000-member Lecturers' Union, the National Association of Teachers in Further and Higher Education, had warned strongly against Government intervention. Mr Peter Wilson, secretary of the union, said such a move would be "an outrage" and "absolutely outrageous." It would make NAFHE members "extremely angry," he said.

But the Cabinet is less likely to have been influenced by trade union anger and threats of repercussions than by the difficulties of the Parliamentary timetable.

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Soviets woo Commonwealth nations

from John O'Leary

COLOMBO

Third world nations at the Commonwealth Education Conference which opened in Sri Lanka this week have responded coolly to a Soviet Union offer to expand its scholarship programmes for students who can no longer afford to study in Britain.

British representatives at the conference have made it clear to delegates that there is no hope of a relaxation of the full-cost fees policy this year. Any change would come only after an assessment of the new policy's impact on overseas recruitment.

But two British representatives are taking part in the deliberations of a special committee drawing up plans which will help Commonwealth nations to cope with the new policy. Many member states are reluctant to take up the offer of more free university places from the Soviet Union.

British determination to stand by its fees policy has been met with resignation by officials from developing countries. The policy is the most controversial issue being discussed at the conference, and delegates have been surprised by Britain's willingness to sacrifice enormous good will for the sake of a small saving.

Discussions have been concentrated on constructive proposals for the future, rather than on criticism of the British policy. The developing nations are looking to countries such as India to take some of the students who would normally have gone to Britain.

Mr Joseph Arap Letting, Kenya's permanent secretary for higher education, said an offer of additional places in Moscow and elsewhere had been made despite Kenya's boycott of the Olympic Games. But the Kenyan Government had decided to cut back on the 100 free places traditionally taken up and not to accept more.

Other African countries are already sending more students to eastern European universities and have also been invited to accept a programme. In an attempt to shield the poor nations from the worst effects of the fee increases, officials at the conference are considering an expansion of the Commonwealth scholarship and fellowship plan. They have also recommended a complete review of the plan over the next year.

The Commonwealth secretariat, in a paper on the fees issue, has suggested the introduction of more "split" courses to be undertaken partly in the developing country and partly overseas. It also recommends African, Caribbean and Pacific countries to explore through diplomatic channels possible exemption from the new fees as alternatives to the Lomé convention with the EEC.

The use of more exchange schemes is also suggested, together with greater use of distance learning techniques. Education ministers will discuss the officials' recommendations in three days of talks next week.

For the longer term the secretariat has suggested trying to negotiate lower fees at institutions with historical and continuing significance for the Commonwealth. Institutions in London, the School of African and Oriental Studies, the London School of Economics and the School of Hygiene and Tropical Medicine are among those quoted.

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Survey reveals the motives for study

by Charlotte Barry

Major differences in the motives of women and men participating in adult and continuing education are revealed in a confidential survey of a survey by the Advisory Council for Adult and Continuing Education.

It shows that while most men enrol in courses that will teach them a specialist skill for their work or lead to a better paid job, the majority of women still use adult education courses to get them out of the home or as an opportunity to meet people. However, a growing number are enrolling on courses which will train them in a vocational skill.

The survey, which takes a comprehensive look at the educational experience of nearly all adults, was carried out on behalf of the advisory council by a private firm of market researchers which interviewed a sample of 2,500 adults throughout England and Wales.

Its aim was to assess existing participation in adult education, find out more about the needs and interests of those with low educational experience, identify the factors preventing people from taking part and investigate the present and future demand for continuing education.

Of those interviewed, 37 per cent had started at school beyond the statutory leaving age and 12 per cent had continued full-time education after school. While 12 per cent were studying a post-initial course at present, 37 per cent had taken any course, and 21 per cent had taken one within the past three years.

Nearly half those interviewed (46 per cent) said they wished they had

Union building under threat

Students at South Bank Polytechnic are in danger of losing their union building because the site has been earmarked for industrial development.

The union is in an old school in Rotary Street, Southwark. It is under licence from the Inner London Education Authority who lease it from the City of London Corporation.

The lease runs until 1985, but in 1981 the corporation has a six-month option to terminate the lease. The polytechnic believes the lease will be terminated early, because Vickers, the council's own planning permission to develop the site.

Union administrator John Girth said: "Given that a nearby site was recently sold by the GLC for £4.7m it seems highly unlikely that the corporation will want to redevelop the lease until 1985."

The union provides a shop, catering facilities, a social club, the editorial office of the student newspaper, Digger, a welfare student services unit, a library, a day advice centre. The students say the old school is totally inadequate for their needs.

Mr Girth said: "If the worst came to the worst, the polytechnic would provide us with office accommodation. They are at present planning to help us. But the Council for Academic Awards requires certain standards of student facilities and we believe that to provide this we need a separate building."

An ILRA spokesman said: "We are aware of the situation and are looking for an alternative site for the polytechnic. As yet we have not come up with anything."

£250,000 for new course at Newcastle

Newcastle University is to receive £250,000 for a new chair in Speech, Literature and Language. The money is to be used to fund a research project on the history of the English language from the 15th to the 18th centuries.

NELP staff in job lottery

Four assistant directors of North East London Polytechnic may face a reselection procedure in which only five will keep their jobs.

NELP's eight faculties are being cut back to six—and although redundancy notices to 62 lecturers, due later this month, have been deferred, the polytechnic's administration is pressing on with staff economies or assistant director level.

Two of the assistant directors are heads of the faculties due to disappear: the faculties of environmental studies and the faculties of human sciences. Redundancies from the committee, which met first last month to review the entire directorate, have to be ratified by the governors.

The continued conflicts of the chairman of governors, Mr Arthur Edwards, polytechnic director Dr George Brown, and five governors—including one from each of NELP's three maintaining boroughs.

AUT condemns training body closure

The Association of University Teachers has protested to the Committee of Vice-Chancellors and Principals over its decision to close down a training body for university lecturers.

The association has written to the committee condemning its "wholly negative attitude" by cutting off a central agency for the training of university lecturers.

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Employers look again for compromise

by David Johnson

Local authority employers are to have a further search for a compromise formula to avoid continued confrontations with lecturers' union leaders over redundancy procedures.

The two sides remain deadlocked over the status of the 1975 agreement between the Council of Local Education Authorities and the 70,000-strong National Association of Teachers in Further and Higher Education.

While the employers' view is that the agreement, which stipulates that one year's notice must be given, can be no more than a set of recommendations not binding on individual authorities, the union's view is directly the opposite.

This disagreement has threatened to destroy lecturers' faith in the new national joint council on lecturers' conditions of service.

Both management and unions

have expressed a desire to see a national council work—both regard it as a first step towards a single negotiating body for both pay and conditions.

This objective requires changes in the Remuneration of Teachers Act, the legislation for the Burnham committees. Officials are already working on proposals for the necessary changes, a process which will continue to become clear after a meeting between Mr Mark Carlisle, the Education Secretary, and local education authority leaders last week.

Notable is now considering ways by the employers to resolve outstanding problems of pay rates for researchers and part-time payments for part-time lecturers.

Senior management officials are already working on a scheme to enable savings to be made more quickly through redundancy programmes.

Both management and unions

MSC launches experiment on participation

by Patricia Santinelli

An experimental scheme is to increase the amount of further education received by young people in the Youth Opportunities Programme. It is to be set up jointly by the Manpower Services Commission and local education authorities in Britain.

The MSC has been discussing with chief education officers at local authority planning meetings which the rate of participation in further education of young people on work experience schemes with YOP can be increased from the present 40 to 100 per cent.

Initially, 13 local education authorities, one in Scotland, eight in Wales and the remainder in Britain, are to be chosen to conduct a year experiment which might provide a formula to increase participation for all pupils on a national basis.

The scheme, with its emphasis on local authority planning, marks a departure from the more piecemeal and more direct approach to colleges currently in existence.

Each participating authority is to draw up a local plan of the number of young people flowing through work experience during the year and the numbers likely to receive further education within existing facilities. It will then be able to assess how the rate can be increased from 40 to 100 per cent or a lower figure by providing extra facilities either within the help of colleges or outside centres.

"Our main objective is to get some lessons," says the MSC, "whether it is of a particular kind of administration or planning which has proved successful and can be disseminated to other authorities."

The Commission is also aiming for the results of the latest survey on the numbers of young people leaving the programme to see what action can be taken on this front. Their last survey showed that one out of 10 youngsters went on to further education or training.

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£931,000 boost for geology research

A grant of £931,000 will be awarded to the National Environmental Research Council to support university research in geology. The money will be used to fund five centres, concentrating on geophysics and isotopes, the dating of rocks and the study of different forms of which elements are present in rocks.

The awards include £400,000 to support general facilities at the Scottish Universities Research Centre at Glasgow, £172,182 for Oxford University, £129,782 for Oxford University, and £152,000 for Cambridge University.

The work is intended to improve knowledge of present geological processes and earth movements, and to study those that have taken place in the past and which are recorded in rock structures.

Lecturers stand to win 15 pc increase

by David Johnson

The arbitration recommendations announced last week would boost most college and polytechnic lecturers' pay by about 15 per cent from September.

The findings suggest an increase of 12 per cent, based on the full post-Clegg scales, from April 1.

On top of this, account seems to have been taken of lecturers' complaints that the Clegg award, which will not be fully implemented until September 1, reduced the differential with schools.

Most lecturers, who received 17 to 19 per cent from Clegg, will get a further 3 per cent from September 1, and those who were awarded 20 to 22 per cent an extra 21 per cent. The senior staff who were awarded 23 per cent or more by the Clegg commission are recommended to receive only an extra 14 per cent.

The accompanying chart indicates generally how much lecturers were paid in April 1979, what they are receiving now (ie 1979 salaries plus the first instalment of the 18.2 per cent Clegg award) and what they can expect with the full arbitration award and the second part of Clegg, which are both payable from September.

Behind the recommendations is a firm intention by the arbitration panel to keep the amount of new money within the region of 13 to 14 per cent. The employers' representatives would have preferred to pay less than 13 per cent to take account of the Clegg award to the face of Government determination to restrict local authority spending.

But, the panel said, the teachers regarded this as merely a strength version of the standard employers' defence of inability to pay—often made yet never really substantiated in the past.

Unwilling to be drawn into this political arena, the panel admitted it was difficult for them to assess objectively and technically the underlying reality of the counter-claims about the true financial state of affairs.

"We must however acknowledge the overall economic difficulties and accept that this claim has to be considered again against this background."

The reaction of the 70,000-strong National Association of Teachers in Further and Higher Education was muted. General secretary Mr Peter Dawson pointed out that the award increased the management's final

offer by over half as much again. It "clearly vindicated" the decision to go to arbitration, he said.

But the union expressed its concern that the award was not enough to prevent the erosion of salaries which had led to the need for

Knighthood and Clegg. The arbitration panel echoed the Clegg Commission's reservations about lecturers' pay structure and called for an independent inquiry which could make recommendations to the Burnham FE committee.

	April '79	Current	Sept '80
Lecturer 1	min 3480	3777	4681
	max 5814	6490	8048
Lecturer 2	min 4470	4851	6013
	max 7149	7794	9701
Senior Lecturer	min 6537	7191	8953
	max 8233	9039	11285
Prin. Lecturer	min 7091	8309	10359
	max 9373	10805	13245
Heads of Dept.	min 8435	7014	8732
	max 11232	12337	15439
Vice Principal	min 7155	7638	9791
	max 14562	16184	20342
Principal	min 8400	8198	11485
	max 18935	19119	24101

(What lecturers would earn with the arbitration award. (These figures are subject to official confirmation)

White-collar workers' lump sum formula

University white collar workers and their employers have agreed on a way to avoid the complexities of negotiating their 1980 pay claim while the Clegg Commission is still examining their 1979 salaries.

The Government agrees, the Clegg comparability exercise will be based on July 1980 salaries instead of July 1979.

Because any increase awarded to the 20,000 clerical and secretarial staff would have been paid from their 1980 pay claim, the Government has agreed to reach on a simple comparability formula for a lump sum payment to compensate for the change in data.

Staff are also to receive a 131 per cent interim award based on January, 1979, scales and payable from July 1 on an account of Clegg's recommendations.

Ground work for the Clegg study is still in its early stages and although the report is still formally expected in September, it is highly likely to be delayed. So the National and Local Government Officers' Association, had lodged a 20 per cent pay claim effective from July this year. The new deal is intended to remove the obvious difficulties this created for negotiators.

Nalga's university branches have overwhelmingly supported the deal. Their leaders are anxious that the interim settlement should not be misinterpreted as acceptance of the Government's quest for restraint in public sector pay.

"If the Government does not clear the alteration in date we would expect immediately to go back to the negotiating table and pick up the rest of the money," Nalga's universities officer, Mr Alex Thompson, said. "The employers recognize this."

Both parties have agreed to accept the Clegg recommendations.

Subsidies cut will push up meal costs

by Elaine Williams

Over one million students in polytechnic and colleges will have to pay more for college meals and accommodation next term because of a reduction in subsidies from local authorities.

The increases are the result of a circular sent from this Council of Local Education Authorities (CLEA) to local authorities all over the country, which states that further education institutions must try to meet the costs of their catering and accommodation rather than drawing money from the subsidies pool.

CLEA argues that money can be easily squeezed out of the pool to meet extra costs and so there is no incentive for efficiency. Where students used only have to pay for the food, they will now have to pay for food, fuel, labour, staff uniforms and crockery.

The cost of some self catering accommodation will have to be taken into account of the rents paid locally by students for privately rented lodgings and flats.

"Student accommodation was built at a great capital cost," said a spokesman for CLEA, "we now think that local authorities should begin to recoup some of this cost, just as private landlords do."

The National Union of Students is reacting angrily to the effects of the circular, which they say has resulted in catering staff reductions, food price increases of up to 20 per cent, and a reduction of kitchen staff.

According to the NUS, fees of 100,000 are going to be implemented at Bedford College of Higher Education, Hatfield, Huddersfield and Kingston Polytechnic and one half of fees at Liverpool Polytechnic will lose all catering staff and weekend catering will be cut.

Feeding staff are to be made redundant at Middlesex Polytechnic and 15 at Oxford Polytechnic. Brighton Polytechnic may be turning some of its catering into a canteen, food prices at North Staffordshire Polytechnic are being increased by 15 per cent and Birmingham Polytechnic is closing four of their canteens.

CLEA's proposals are a "total and unacceptable" said Leighton Andrews, the NUS's vice-president, who says they are a completely one-sided attack on the question of catering efficiency.

The NUS has suggested that more should be done of the canteens during the summer months, by committees of the National Association of Teachers in Further and Higher Education has called for a blacklist of the new jobs if they are



Fiona Donaldson and Peter Woodhead (centre) work with third-year engineering student David Knox who is helping the wave-power research project at Edinburgh University. Fiona has helped in the laboratories for a year since leaving school and will soon start a degree in physics. Peter intends to complete a pre-university year before reading mechanical engineering. The university has been employing school-leavers for four years.

NUS steps up 'boycott' drive

by Paul Fletcher

The National Union of Students is seeking to cooperate with the Association of University Teachers in trying to end collaboration with South African universities and academics.

This follows a decision last May by the AUT Council to adopt a policy of "total boycott" of all forms of contact with South African universities. The NUS has long supported a boycott, responding to a call for "total isolation" made by black leaders in South Africa and by the African National Congress.

The union believes that the sooner South Africa is isolated the sooner freedom from apartheid will come. It argues that contact and cooperation with South Africa has not brought any fundamental changes in the regime.

The NUS is hoping to set up student-staff committees on every campus to monitor and oppose all university links with South Africa. This will include opposition to academic exchanges, investment in

companies with South African interests, recruitment of graduates to work in South Africa, and purchase the use of South African products.

Ms Linda Miller, former NUS executive member, said: "Universities are supposed to be places of education and institutional learning and not split by the horrors of apartheid. By associating with South African universities, we give respectability for them to continue as they are."

The union, working closely with the Anti-Apartheid movement, is preparing briefing material for all new students and staff, and campaigning in Southern Africa—Education for Freedom.

The union is also running campaigns to free the black resistance leader Nelson Mandela, and to secure the release of the NUS from detention in Robben Island jail.

It is also preparing a document for the United Nations special committee on apartheid detailing the extent and value of academic collaboration.

Meeting called on Bradford jobs dispute

Lecturers' union local officials and the principal of Bradford College, Mr Eric Robles, are to meet later this month to try to sort out a dispute over plans to advertise for 10 new staff soon.

The Bradford district liaison committee of the National Association of Teachers in Further and Higher Education has called for a blacklist of the new jobs if they are

Students to bear costs of classes

by Charlotte Barry

A number of local education authorities in outer London and the home counties are withdrawing from the "free trade" arrangement which enables students who live outside central London to attend adult education classes there at no extra cost.

From this autumn, prospective students from East Sussex, Kent, Hampshire and the London boroughs of Barnet, Bexley, Bromley, Ealing, Merton, Redbridge and Sutton will have to pay the full economic fee to the ILA.

They will join students from Berkshire, Essex, Surrey and West Sussex which withdrew from the recoupment scheme last year. Enfield and Bedfordshire are considering taking similar action but have yet to come to a final decision.

The refusal of seven out of the 20 London boroughs and six out of the eight neighbouring counties to pay ILA's fee will affect up to 50,000, or 20 per cent, of ILA's 250,000 adult students. The additional charges will force them to pay between £58 and £94 for a three-term course, compared to the standard fee of £45 paid by inner London students.

Details of these latest withdrawals from the scheme are laid out in a circular sent last week to all principals of ILA's 32 adult education institutes as well as the City Lit, Croydon, Recreation Institute, Morley College, Mary Ward College and the Royal School of Needlework who are warned to ensure that enrolling students do not give false addresses in order to avoid paying higher fees.

Some of the ILA's withdrawing from the scheme will be issuing vouchers to special categories of student for pay recoupment.

Kept and Sussex East have agreed to honour the "free trade" agreement for one course per term per student. Bexley have created exceptions for handicapped people and adults literacy, and students studying English as a second language, while Surrey have exempted the handicapped, students in adult literacy and remedial English and arithmetic and those on playgroup leader courses.

The expected drop in the number of students from outside inner London will have a disproportionate effect on adult education institutes in the centre which cater for large numbers of commuters.

Institutes sited on the boundaries of boroughs which have little provision of their own could also suffer. It is expected that Woolwich and Eltham institutes in south-east London could lose as many as 5,000 students out of a total of 17,000.

The ILA is also concerned about the future of specialized courses.

A further dimension is old age pensioners living outside central London who take advantage of their free bus passes to attend classes in the city. Although pensioners in London pay only £1 for a class, they will be forced to pay a full economic fee of £55.

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North American News

Faculty shortages reach crisis point

from Clive Coolson

WASHINGTON Universities are finding it almost impossible to recruit new faculty members in some technical subjects. The shortage is most acute in computer science, where overworked departmental chairmen are talking freely of an academic manpower crisis. The supply of young faculty members is also drying up ominously in many engineering disciplines, though engineers are generally not as badly off as their computing colleagues.

Last month the chairmen of about 50 of the 70 PhD-granting computer science departments in the United States and Canada met in Utah, under the auspices of the Computer Science Board, to discuss the crisis. They agreed that the time had come to bring it to the attention of the public, and members of the group are now working on a position statement that will probably be released next month.

The causes of the problem are similar in engineering and computing. A general shortage of skilled manpower in these fields, combined with rapidly increasing demand for their services, means that companies are competing more and more fiercely to recruit new graduates.

Each year the College Placement Council reports a new surge in job offers for engineering and computer science students. Its latest survey, published last week, says that engineers got 63 per cent of all offers received by this year's graduates. And their starting salaries are often above the normal level for mid-career academics. Someone with a bachelor's degree in petroleum engineering can start on \$23,444, and the average for new graduates in engineering is \$21,612—more than the national average for associate professors.

When they are deluged with offers like these, it is not surprising that few graduates in engineering and computer science choose to go on to a PhD programme, where they expect to earn only five or six thousand dollars a teaching assistant. And most of those who do stick to their undergraduate degrees are lured away by industry. Even so, a handful are available for academic employment.

We figure that, altogether, we probably have only 50 new PhDs a year willing to join a university faculty that we all fight over," said John Hamblen, chairman of Computer Science at the University of Missouri at Rolla. Dr Hamblen, who conducts a computer manpower survey for the National Science Foundation, estimates that the total American demand, by industry, government and academia for computer-related PhDs is 1,300 a year, while the annual output in 1976/77 was only 326.

Dr Hamblen said he has been fighting in the two years to get his department for two years. The campus administration has authorized him to offer a nine-month salary of \$24,000 to new PhDs—an unheard-of starting rate for most academic disciplines—but he has not been able to recruit anyone. Most of his colleagues elsewhere are in a similar position.

Faculty recruitment is also at a standstill in many major engineering departments. George Low, president of Rensselaer Polytechnic Institute, said in an interview that 10-15 per cent of the 17,000 engineering faculty positions in the United States are vacant.

The total American output of engineering PhDs fell from 3,400 in 1969 to 2,800 in 1979, and an increasing proportion were foreigners, leaving substantial declines in the number available for employment in the United States. Since the mid-1970s the industrial demand for PhD engineers has been increasing voraciously, and, of course, corporations can offer them far better salaries than universities.

If the situation continues we may have still more difficulty finding new faculty with appropriate degrees," said Lawrence Von Tersch, dean of engineering at Michigan State University. The competition from business and industry is very heavy, and has increased with the new emphasis in Washington on energy, military hardware and space exploration.

University engineers and computer scientists emphasize that salary differences between industry and academia are not the only reason why they are losing out in the recruitment competition, and many have pay is not even the most important factor. As they say, people are attracted by freedom and flexibility of academic life and because they enjoy teaching and research—no one works in a university to make a lot of money.

The essential problem, then, is

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computer science section said the university plans to expand its facilities, in order to make it more attractive to researchers. This year the government will spend a total of \$30.55m to support university computer science, he said.

Next year the NSF will start a new programme to support young investigators who have just completed PhDs in computer science and are starting their first academic jobs. "They're a group that needs particular help because that is a decisive point in their careers," said Mr Curtis.

Academic computer scientists welcome the NSF young investigator programme, which should enable them to retain a few more PhDs who would otherwise go to industry. But many university leaders in computing and engineering believe that the most helpful step the government could take would be to initiate a big new fellowship programme for PhD students in shortage areas, leaving a substantial decline in the number available for employment in the United States. Since the mid-1970s the industrial demand for PhD engineers has been increasing voraciously, and, of course, corporations can offer them far better salaries than universities.

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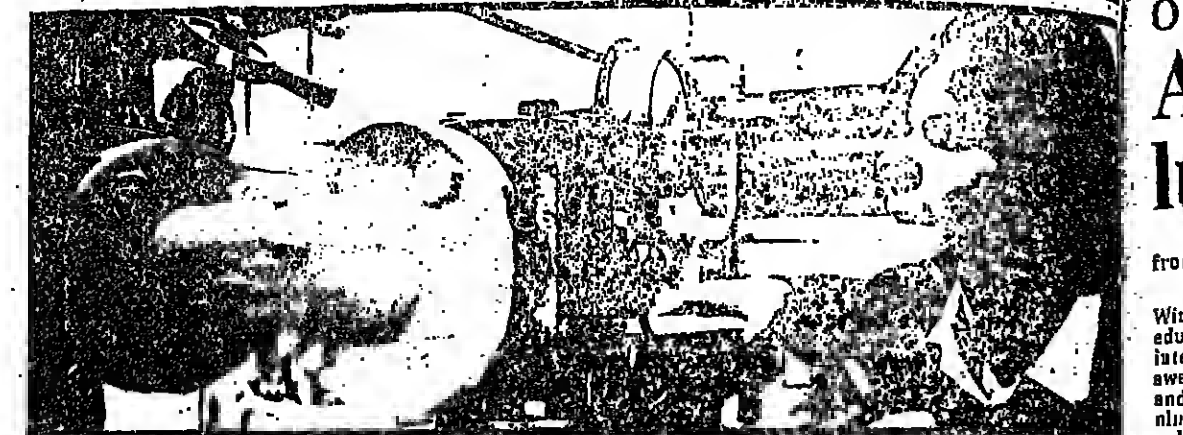
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The poor suffer worst of all

Women's colleges enjoy revival

The 417 surviving women's colleges in the United States are enjoying a resurgence of popularity, after a decade in which about 160 of their sister institutions went co-educational. The number of women's colleges has risen sharply since 1970, and is now 417, according to a new survey published in Washington this week by the Women's College Coalition.

The coalition, which represents 100 of the 417 women's colleges, says that the revival of women's colleges is a result of a growing awareness of the need for single-sex institutions. Throughout the 1970s went up by an average of 18 per cent, but four-year colleges and 40 per cent in two-year colleges.

Their students have higher educational and professional aspirations than women at co-educational institutions, the report says. The proportion of female first-year students who say they plan to go on to earn a master's degree is 37 per cent, compared with 25 per cent for women's colleges, and 20 per cent for all four-year colleges.

Fifty-five per cent of faculty members at women's colleges are women, compared with 35 per cent at other four-year universities. Fifty-five per cent of the women's colleges are headed by a woman.

One striking finding of the study was that, although women's colleges remain particularly loyal to their plans, they are also more open to change than men's colleges.

Clive Coolson, North American Editor, The Times Higher Education Supplement, is in New York City.

Private sector runs down assets

from our North American Editor

America's private colleges and universities seem to be entering a period of financial decline. The burden of inflation has been put where it does not belong, and where it is long overdue. It will produce inevitable damage.

"If this inadequacy is not corrected, it will ultimately produce a decline in the amount of human talent and initiative attracted to higher education, a steady attrition of morale, and general weakening of educational and scholarly effectiveness."

The consumption of physical capital takes the form of deferred maintenance of buildings, grounds and equipment, deferred replacement of worn-out machinery and equipment, and a steady decline in the quality of the physical plant.

Dr Minter, an independent consultant, and Dr Bowen, professor of economics and education at Claremont Graduate School, are particularly concerned about the human side of the depreciation. They say that faculty salaries have not kept pace with inflation. They say that faculty salaries have not kept pace with inflation. They say that faculty salaries have not kept pace with inflation.

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the college scholarship service financial experts express concern that they were not greater. Joe Paul Case, the director of programme administration for CSS, said: "The main reason for this phenomenon is that colleges are being forced to keep costs down by cutting salaries."

But, in terms of the Minter-Bowen report, one could say that the students' gain at the expense of faculty members, whose salaries were paid well below inflation, and of buildings and equipment, whose maintenance and replacement were deferred.

In their report, which is based on a representative sample of 127 private colleges and universities, Minter and Bowen show how light an area where data have been scarce—the numbers of administrators and their salaries have increased by 18 per cent from 1974 to 1979-80, and their salaries have increased by 18 per cent from 1974 to 1979-80, and their salaries have increased by 18 per cent from 1974 to 1979-80.

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Professors convicted of making drugs

In two separate cases, senior professors from New York have been convicted on charges of using university laboratories to produce illegal drugs.

A judge found that John J. Janusch, chairman of the chemistry department at New York University, was guilty of conspiring to manufacture and distribute drugs, including LSD and mescaline.

Dr Janusch, 52, was sentenced to 15 months in prison and a fine of \$10,000. He was also ordered to pay the costs of the prosecution.

Dr Janusch's defence lawyer, Robert J. Buehler, said that his client was a "man of science" who had been misled by a "man of law" who had made up a story about drugs.

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Public sector management course causes friction

from Annalise Hapson

COPENHAGEN The Ministry of Education has decided to establish a new department of administrative science at the University of Copenhagen, which will aim to qualify students for work in the public sector.

The new department was first proposed last autumn, but there was strong opposition from the Institute of Political Science at the University of Aarhus in Jutland, which feared competition. During the past 25 years the institute has gained a considerable reputation as a centre for research in administrative science.

The manager of the institute, Ole P. Kristensen, said that his department was not opposed to the new department, but that it was concerned about the loss of its status as the leading centre for research in administrative science.

There has been some discussion as to whether the new course should take five or six years.

Territory plans to adopt Alaska-style university

from Geoff Maslen

MELBOURNE The Northern Territory is planning ahead with plans to establish a university in the north, which will be a blend of the traditional and the modern.

The territory's chief minister, Mr. Douglas Gough, has appointed a planning committee, headed by Dr. James Gough, who was secretary of the territory's education department before his appointment.

Although no official proposal has been put to the federal government, the Territory Education Commission has been set up to coordinate the planning of the university.

The territory's present higher education system comprises a community college in Darwin, which offers some degree courses and a college of advanced education in Alice Springs. An open access college is due to open soon at Katherine.

In his report, Professor Walker recommended that a university be set up to coordinate all

Student leader in boycott

from John Walsh

DUBLIN The Irish Republic's reconstituted National Council for Educational Awards held its first statutory meeting last week only to be boycotted by the sole student representative.

Mr. Jimmy Collins, student union president at the Limerick National Institute for Higher Education, intended to keep up his embarrassing protest until the Education Minister, Mr. Wilson, appoints a second, nationally representative student member.

The previous ad hoc council had two student members. Mr. Collins and the union of students in Ireland of which all individual student unions are automatically constituent organizations, says there should be a national representative of all.

The council, which approves courses and confers degrees, diplomas and certificates in the non-university sector of higher education was set up initially in 1972, but only recently has it been given statutory powers.

Overseas News

Absentee professors lured back to fold

from Uli Schmetzer

ROME With a 40 per cent pay rise, education minister Adolfo Sarti intends to lure away from extra-curricular activities and back to the bosom of their alma mater.

In order to qualify for the biggest post-war rise in Italian professors' pay, they must agree to work full-time on the campus.

On paper the ministerial seduction (contained in a mini-reform project for education now before parliament) appears formidable. It would boost the annual income of senior professors to a figure ranging from the equivalent of £10,000 to £15,000 a year.

In reality however the lure is too low for the two thirds of Italy's tenured staff who hold supplementary jobs as consultants and government officials on wages far more lucrative than their campus earnings.

"Among European academics the Italian professor is financially best off," says Rome sociology Professor Franco Ferrarotti. "He writes books, he holds other jobs, he works as a consultant... and as a politician."

Successful Italian governments, prompted by angry students who may see their absentee professor only a year (if they are lucky), have tried in vain to introduce legislation curtailing or prohibiting jobs outside the campus. After all many of the members of Parliament asked to approve such a measure would have lost their faculty chairs had it become law.

The list of present and past political leaders who simultaneously held or hold academic posts is endless. Former Italian Premier Aldo Moro was kidnapped and murdered in 1978, postponed cabinet meetings for his cabinet lecture in the morning. Politician like Giovanni Spadolini and Christian Democratic Strongman Amintore Fanfani would never think of giving up campus lecturing which carries that aura of intellectual being which

India doctors' training a 'mismatch'

from A. S. Ahrachom

BOMBAY India has 80,000 more doctors than it can sustain and is continuing to "over-produce," a recent World Health Organization study has concluded.

This is despite having one of the most unavourable doctor/patient ratios in the world. Referring to the "rapid expansion" of medical studies in India, the report says: "It is not clear whether the policy behind this rapid expansion was to compensate for migration losses, to create better rural coverage by a massive 'over-spill,' or merely a response to a large demand for medical education which was completely unrelated to the economic demand for physicians."

The report blames the nature of Indian medical education which produces physicians who "tend to be unsuited to work in conditions prevalent in a poor country such as India, especially in the rural areas."

Indian medical education is the handwork of the Medical Council of India which adopts international criteria "and usually not adapted to the needs of the country." As a result, Indian doctors can function only in a "highly expensive, urban and curative-oriented" system modelled on that of the West, in which specialists "with qualifications for removed from the real needs of the nation" play a key role.

Since such a system is confined not only to urban India but also to the richer classes in urban India, its potential clientele is limited to a fraction of the total population. For this small group, the number of doctors coming out of medical colleges is more than adequate. Hence the "surplus" of doctors.

The obvious side of the over supply is the lack of support staff, especially nurses. "There are more physicians than nurses in India," says the report.

Attempts by the government to induce doctors to work in the villages have failed largely because the villages do not usually have even the most rudimentary professional or living facilities.

British don resigns from Dutch post

from Linnel Cohen

NIJMEGEN If the appointment of a British professor in a Dutch university is unusual, the voluntary departure of one of these rare British emigrants from so unique a post is an even more remarkable event. Yet this is precisely what Dr M. J. S. Rudwick, for six years professor of history and the social aspects of the sciences at Amsterdam's Free University, announced last month having resigned his post with effect from January 1, 1980.

The factors which led to this decision to give up such a lucrative and influential academic position were outlined by Professor Rudwick in a letter published in a recent edition of the Free University's news paper *Ad Valorem*. The letter makes clear that, at the root of the problem, was the difficulty facing every academic taking a foreign post, namely to adjust to quite different sets of social and educational values—not to mention political practices—which form an integral part of the new working situation.

In short, Professor Rudwick found that distant fields were not always greener. In his letter he declared his intention of returning to England just as soon as possible after "one of the most unfortunate and frustrating periods of my life."

Almost everything, it seemed, had conspired to upset and frustrate the professor. On the one hand, he castigated the teaching staff for the time that they spent on their "ancient" democratic administrative functions—these were, according to Rudwick, no more than "an excuse for their lack of scientific capacity"—while at the same time he complained bitterly of how a "witch hunt" had been developed against one of those staff, Henry Broekman, following his criticism of the organization of a political group calling itself the Centre Party which had been linked with attacks on Moroccan immigrants earlier this year. It seems that Broekman himself had nothing to do with these attacks, but Professor Rudwick found the accusation of "fascism" levelled against Broekman by some of his Dutch colleagues and students to be the last straw.

What seemed to irritate the resigning professor particularly was the contrast that he drew between the strict treatment handed out to Broekman as a result of his political activism, and the great freedom enjoyed by many of his fellow professors in Amsterdam to make use of their high academic position as a bridge-head from which to advance the interests of their party politics. Unfortunately, what the resigning British historian apparently did not appreciate was that politics in Holland, as in many other European countries, is not a bridge-head from which to advance the interests of their party politics. Unfortunately, what the resigning British historian apparently did not appreciate was that politics in Holland, as in many other European countries, is not a bridge-head from which to advance the interests of their party politics.



The poor suffer worst of all

She is in it

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Plagiarism on a cynical scale is discovered among students. The choice of counter-measures is not a pleasant one.

When judging has a new meaning for examiners

It is truly demoralizing to find that your students have been cheating in their examinations. Such a discovery is liable to undermine the relationship of trust and goodwill between teacher and taught, and may make one suspicious of future examinations of students. I am aware that the realization that cheating must occur, and be dealt with, in virtually every academic institution, is rare in the extreme to find any open acknowledgement of this reality. Moreover, to confess to the existence of such dishonesty in one's own institution is to invite quite unwelcome publicity. Yet, is it not important to discuss such matters openly? This is an attempt to do so. However, given the lack of unanimous debate on this question I have taken refuge in anonymity to protect my students and my institution.

The species of cheating which provoked this article was not of the classic caddy kind so often expounded in the public school novel. Usually, this involves a further glance at notes scribbled on one's cuff, or possibly, the pilfering of an examination paper to enable early preparation. Here, I am concerned with outright plagiarism, an offence which is somehow antithetical to the spirit of academic inquiry that it is especially odious. A handful of students, while waiting up a final-year project, submitted essays which contained verbatim quotations from sources. Some plagiarized whole sentences, others paragraphs, and some even entire essays. The plagiarism was so blatant that it was almost comical. I am not sure if this is a new phenomenon, but it is certainly a serious one.

At first I could hardly believe that one of the essays before me could easily be a student's work. I began to scrutinize the whole batch in a spirit of mistrust. I was struck by the quality of the writing, and the fact that the students had achieved it in a relatively short time. I was particularly struck by the quality of the writing, and the fact that the students had achieved it in a relatively short time. I was particularly struck by the quality of the writing, and the fact that the students had achieved it in a relatively short time.

scale, and were the more surprised because of the close supervision procedures on the project, and the explicit warning to attribute quotations given at the outset. It turned out, though that none of the students concerned had submitted a full first draft, a number of standard arguments and assumptions concerning academic standards which are not usually made explicit. At the internalists' meeting it became rapidly apparent that there were hawks and doves on the question of plagiarism. We faced the difficulty that, according to our regulations, a failure at the final-year project could not be condoned, and that it therefore entailed failure of the whole degree. The hawks' initial reaction was that the crime of plagiarism was so heinous that it vitiated all of the offending students' work, and as failure was a just penalty. The doves, horrified at such extremism, argued that we should give the lowest possible mark for the plagiarized coursework, and that it did not constitute a formal failure, by exercising discretion, bring down each offender by one class. Eventually, this line of argument prevailed.

The plagiarisers of 1980 had been much less devious—almost insultingly so. And their lack of guile, invited severe retribution. The plagiarism was so blatant that it was almost comical. I am not sure if this is a new phenomenon, but it is certainly a serious one.

One of the problems was the lack of an established procedure for dealing with this form of cheating. A circumstance deriving from the relative youth of the course and the fact that we had never seriously anticipated such a difficulty. A further contributory factor lay in the small amount of work formally examined. The plagiarism was so blatant that it was almost comical. I am not sure if this is a new phenomenon, but it is certainly a serious one.

desiring with it. Lacking such a system, we referred the matter to the internal examiners and also alerted our externalists. The ensuing discussions were used to invent relevant procedures, and our debates brought into play a number of standard arguments and assumptions concerning academic standards which are not usually made explicit. At the internalists' meeting it became rapidly apparent that there were hawks and doves on the question of plagiarism. We faced the difficulty that, according to our regulations, a failure at the final-year project could not be condoned, and that it therefore entailed failure of the whole degree. The hawks' initial reaction was that the crime of plagiarism was so heinous that it vitiated all of the offending students' work, and as failure was a just penalty. The doves, horrified at such extremism, argued that we should give the lowest possible mark for the plagiarized coursework, and that it did not constitute a formal failure, by exercising discretion, bring down each offender by one class. Eventually, this line of argument prevailed.

The criteria for deeming a piece of work to be plagiarized were also much discussed. Rightly, it was insisted that the coursework examiners should produce a detailed analysis of each essay to be used as a kind of formal indictment in the presentation to the externalists. After much argument about individual differences it was eventually agreed that we should be consistent with all the offenders as they had all plagiarized substantially.

There were some initial differences among the externalists. One felt that it would be useful to give plagiarisers to give them a chance of proving that they knew some-thing about their subject. Another argued persuasively that they should all fail on the particular course and be brought down a class. A formal fail should not be registered in order to satisfy the regulations. It was agreed that action was finally agreed by both sets of examiners. It was also decided to call in all of the offending students before a disciplinary panel made up of the externalists, the head of department, and the course tutor in order to confront them with the evidence, and to seek an explanation. This proved to be an experience both enlightening and quite painful.



Geoffrey Lockwood looks at the art of university administration

Nune denied the truth of the allegations, although responses varied. In one case, the wailing together of other people's words was presented as a virtuous activity requiring much hard work. In another, the student himself wrote and cited some distressing extenuating circumstances. The express purpose of this confrontation was to signal to all the rapaciousness of the examiners towards the slipshod work of the students, by making the relevant public, to deter future offenders and to root out now my inept culture of cheating.

But obviously, this is not enough, and we have to give close attention to mechanisms which will, so far as possible, insure us against repetition of this year's unpleasantness. First, the formal warning against plagiarism at the outset of the project will be made more emphatically and even more explicitly than before, both in written and oral form. It is dismaying to realize it, but one cannot assume that after two, or even three years' exposure to essay writing all students will abide by the acceptable model of citing in detail sources and arguments which they are quoting or paraphrasing from various sources. So that model obviously has to be spelled out in detail. On top of this, we intend to insist that the first draft of a paper, rather than optional, is mandatory, and that second drafts are demonstrably continuous with the earlier version. Those safeguards should enable misfeasance to be spotted early enough, and for

remedial action to be taken as a formal warning has been issued. Finally, extenuating circumstances will need to be treated more formally with the responsible staff. My concluding reflections are, I think, uncontentious. I have known that teaching was a future trend of university management in Europe, which was financed by the Ford and Volkswagen Foundations. The basic objective of the survey was to study recent developments in these rules we all, partly the structure and practice of university management, to provide a common language and vision as a basis for discussion across national boundaries and for the launching of disciplinary procedures. Perhaps a wig and black cap should be worn at such a meeting.

The main concern of the project was with management at the institutional level with the bodies which take decisions, the structures and processes through which those decisions are taken (the governance structures) and the people and structures responsible for the provision of information and the decision making, and for the implementation of decisions (the administrative structures). The project could not hope to encompass all facets of university management to Europe and present for change over the past decade. The limited range of problems selected as a focus of attention

Geoffrey Lockwood looks at the art of university administration

Managing to make ends and means meet

The rapid expansion of universities throughout Europe in the 1960s resulted almost simultaneously towards the end of that decade in the student revolt and the internationalisation of discussions on managerial efficiency and techniques.

In April 1969, the Organization for Economic Co-operation and Development convened a conference to consider the state of the art of university planning and management techniques. One of the conclusions drawn from that conference was that many of the problems could not be resolved "without changes in management styles of universities". A decade later through its programme on Institutional Management for Higher Education, which formally with the responsible staff. My concluding reflections are, I think, uncontentious. I have known that teaching was a future trend of university management in Europe, which was financed by the Ford and Volkswagen Foundations.

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in order to ensure comparability as far as possible in the work of the three area teams and in the information collected across Europe, the members of the project team agreed upon a common base document for the recording of information and opinions.

In specific institution interviews we held a range of individuals covering the leadership, administrators, senior and junior academic, non-academic staff and students. A total of approximately 400 people were interviewed. The many of results are being reported upon the university community, both staff and students, to help them to resolve their own problems.

Public accountability. What has been the impact of the demand for open in the accountability of public, not only regarding relationships with professional groups, local communities, etc? Autonomy. How far has institutional autonomy been eroded by the changes in the university community, both staff and students, to help them to resolve their own problems.

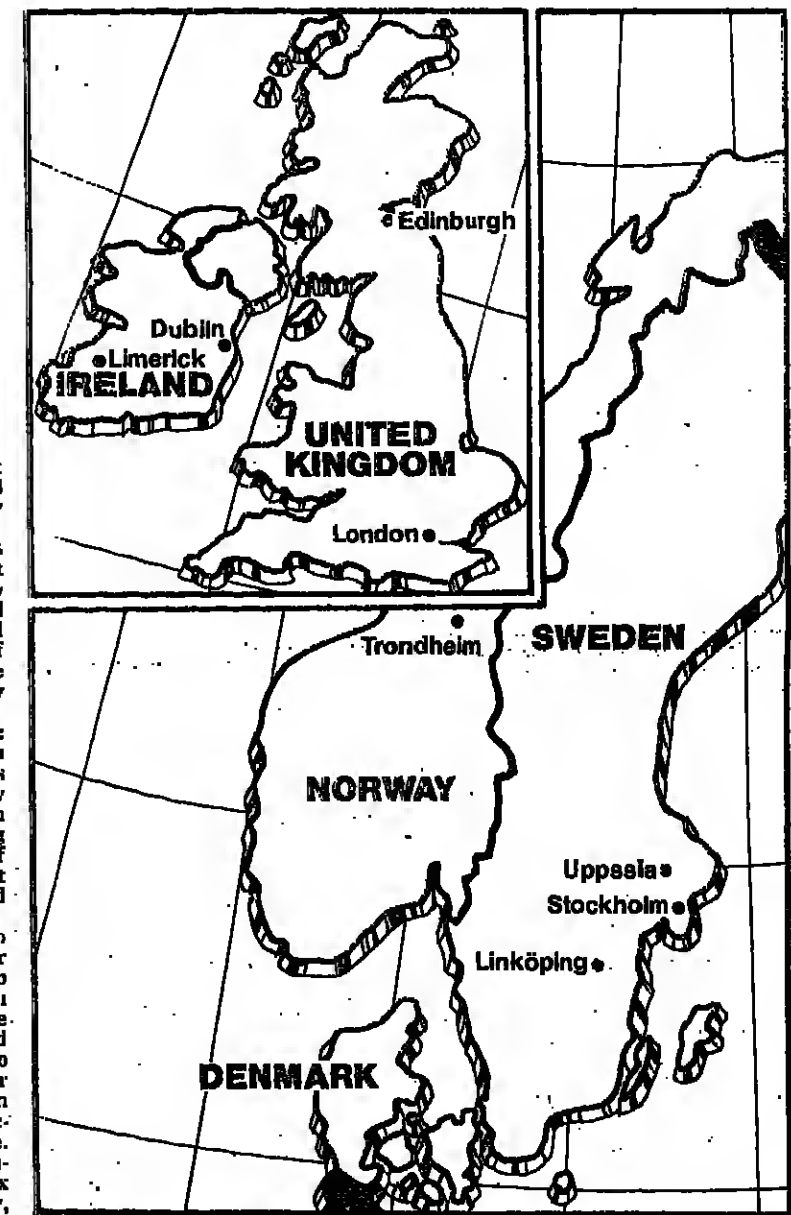
from a management viewpoint when contrasted with the pre-1960 situation. Has this led to entirely new problems for the institutions? The internal politics of most universities were held together by a firm consensus based upon liberal views and an acceptance of partial representation; has the breakup of that consensus been one of the major problems facing university management?

Management/employee relations: The nature of the relationship between the university and its employees has changed rapidly and new demands have been made upon management (changes in working conditions, and the effects of new employment legislation). What effects have these changes had upon management?

The project covered 12 European countries and was conducted under the guidance of a steering group consisting of members from each country. The timespan of a little over a year meant that the field studies were divided among three project teams each responsible for a geographical area. Some 53 selected institutions in the time available. In the area for which I was responsible with Mr E. Prosser of Sussex—Denmark, Ireland, Norway, Sweden and the UK—the sample consisted of 17 institutions functioning in five different national environments, institutions of varied size (ranging from approximately 1,000 to 16,000 students), institutions with over 500 years of tradition and institutions with less than 10 years of history, universities sited in cramped old buildings in dense urban zones, universities on spacious rural sites, polytechnics on multi-sites... and so on.

Legal requirements and regulations. Has the variety of national regulations which have been imposed upon the universities increased the resources of the university community, both staff and students, to help them to resolve their own problems.

Effects of economic uncertainty: The problems of managing growth in an environment of high economic uncertainty, added at various times by the integration of the university into the wider economy, have been a major concern of the project. The project could not hope to encompass all facets of university management to Europe and present for change over the past decade. The limited range of problems selected as a focus of attention



The organizational milieux of universities in Denmark, Ireland, Norway, Sweden and the UK is similar.

to survive when demographic makes the roles they have been fulfilling over the past few decades less pressing upon politicians. Laws concerning the employer/employee relationship, embracing three elements: the employee's role in government (participation or industrial democracy), the employee's role in management (co-determination or negotiation) and the employee's rights and conditions of work (security of employment). Taken together, these three elements have had many effects in addition to those for which they were created. In particular, they have diverted a very significant proportion of the institution's prime resources to the time and energy of its staff from "work" to "management". They have restricted the ability to take decisions and to institute change—the ability to innovate or to adjust the institution to meet ever external demands.

In practice very little evidence of the impact of scale emerged from the project, partly because the external pressures do not vary with internal scale and partly because of the nature of activity within universities—the small institution is as pluralistic as the large one. Despite national differences, the organizational milieux of Uppsala, Edinburgh and Dublin or of Limerick, Linköping and the Polytechnic of Central London, of Heriot Watt, NIT, Trondheim and RIT Stockholm have considerable similarities based upon age and tradition. Closely related to tradition is the effect of the balance of disciplines, of the undergraduate/postgraduate ratio and of teaching and research. For whatever reason the organizational environment of a technological institution is considerably different from that of a humanities and social sciences; in the former it is easier to define boundaries, it takes less time to reach decisions, authority is more visible and accepted and cohesion is easier to obtain.

The level of funding is predictably the most common and pressing problem in all of the institutions. This is clear from the views of all categories of respondent whether it be the students concerned about the levels of grants/loans, ancillary staff perturbed by the lack of facilities, financial officers wishing to attract most government funds, professors concerned about the funding of research, planning officers grappling with resource allocation or chief administrative officers attempting to control the internal political struggles for the scarce resources. However, as the project was more concerned to look at the problems

logical autonomy to admit whatever students it wishes in whatever number but if those students cannot be financed because the state increases or fails to intervene (e.g. in respect of student grants) then the financial autonomy is severely reduced. Autonomy is thus a relative term. The Scandinavian universities feel themselves to be autonomous because the development of the 1970s have increased their freedom of action in certain respects, whereas the British universities feel that their independence is being eroded beyond the bounds of the acceptable; yet in terms of the current state viewed objectively the British universities remain significantly more autonomous than the Scandinavian universities. In a considerable distinction between perception and reality.

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of increased economic uncertainty, partly because the level of funding is a perennial problem, whereas the uncertainty of the 1970s contrasts sharply with the relative certainties of the previous decade. There is no doubt about the extent of the increase in the uncertainty; there are differences in degree among the countries but in general the planning horizons have shortened and become less stable, and systems which required a certain degree of predictability have collapsed. In all of the countries the cash sums of the annual budget are not known until almost into the financial year and are subject to adjustment during the year; also the cash sums are of less utility for budgetary purposes when wage rates to continue the struggle to plan were evident from the respondents. Institutional planning mechanisms had been largely developed in the confidence and apparent predictability of the 1960s and they could not cope in the changed circumstances of the 1970s. Economic drives replaced resource allocation formulas and the siege mentality replaced the exuberant confidence of the previous decade. The comparative swiftness of the shift in the environment, from clear forecasts of expansion and the maintenance of standards to monthly uncertainty, stagnation and economic cuts, outdated the institutional mechanisms. However, in the period since 1977 there are signs that the institutions have been making adjustments to the new circumstances. The decision taking bodies have begun to accept the realization that flexibility, development, innovation can only be achieved by reducing the amount of resources devoted to some activity in order to increase amounts devoted to others; thus mechanisms for reviewing existing commitments and for generating savings from economy measures have emerged in most institutions. Throughout the area there are significantly fewer light sabres for considerably less time than was the case ten years ago; throughout the area the resignation of a staff member is no longer the occasion for a brief discussion as to whether or not a more senior appointment can be made in replacement; but in the start of a serious analysis concerning the need for a replacement end of a fierce discussion amongst representatives of groups as to which should be given the post if it is to remain in being—many more examples of economies and reviews could be cited.

The desire to enter or expand new markets, which was expressed by the respondents in relation to student admissions, is the other arm of the approach to the problem, not only to increase the level of funding but to reduce the impact of uncertainty through a greater diversification of clients. One of our main impressions at the end of the project was about the need to stress the paramountcy of teaching and research. Although it is obvious that the important events in universities occur in the lecture theatre, the seminar room, the laboratory and the library rather than in committee chambers and administrative offices, it is too frequently the case that both internal and external management discussions overlook the fact that their function is to optimise the effectiveness of the teaching and knowledge is created and transmitted. Strangely, we found a much better understanding of that viewpoint amongst professional administrators than amongst academic staff involved in management. Those then are a sample of the outcomes of the project which are concerned with one geographical area. Overall, we found that universities retained their capacities to survive, serve and surprise, and that the justifiable pride in their identity and outputs no longer led them to unreflective expansion of economic growth and political praise.

The author is registrar and secretary of St. Andrews University of Sussex.

Susan Balsom advocates the setting up of a centralized body to oversee and administer awards Time to consider the victims of a diverse funding system

The recent case of a law student suing his County Council for refusing him a discretionary award for a postgraduate law course (Sleigh v. Oxfordshire County Council) is likely to give rise to a more widespread debate about the whole area of vocational training for graduates, and calls into question current graduate manpower planning policies implicit in existing funding provisions.

Grants for teaching, training, and graduate studies are funded from a variety of sources and differ markedly in their objectives. Some are vocational, others are general, and some are for research. The funding system is complex and often confusing. The author is registrar and secretary of St. Andrews University of Sussex.

and tourism studies, Arts administration training, funded by the Arts Council. Most of these courses (including some managed by the SRC, as are vocational oriented agricultural ones by the ARC. The number of awards granted to any of these courses varies, but only themselves may gain a place and yet be unlikely to obtain one of the limited grants and of course, the days of the self-financed postgraduate are long gone.

The diversity of funding means that the awards are not uniform. It is for easier to get a grant for teaching than for any other postgraduate training, at a time when the projections for teaching requirements are especially high. Secondary schools are demanding more of the latest papers and the need for research is growing. The author is registrar and secretary of St. Andrews University of Sussex.

ing resources for research funding and for further study. The SRC, for example, has drastically cut its research award system, which now is financed only by voluntary contributions. Vocational training (and from these bodies are not only themselves affected, but may be said to rival the fundamental interest of the councils, namely that of research. Local authorities, meanwhile, have their own problems of finance, so that grants applying for vocational training awards are often in short supply. The author is registrar and secretary of St. Andrews University of Sussex.

At the same time, some courses, which are only partly covered by research council funding may be hard pressed for students, especially if the effects of overseas students are realized. Present funding is likely to deter new vocational courses and may see some existing ones fold for lack of uptake, although not all are in danger. The author is registrar and secretary of St. Andrews University of Sussex.

tion of his or her personal aims, although this is not so in teaching, because of the mandatory nature of grants. At the same time, some courses, which are only partly covered by research council funding may be hard pressed for students, especially if the effects of overseas students are realized. Present funding is likely to deter new vocational courses and may see some existing ones fold for lack of uptake, although not all are in danger. The author is registrar and secretary of St. Andrews University of Sussex.

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BOOKS

**Lucid, vivid
and rapid**

A goose not worth the plucking

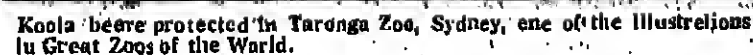
Personal identity

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BOOKS

Chemical kinetics

The second phase was the development of collections as repositories for animals paid in tribute or given as gifts. Considerable status was gained dependent on the size of the collection or the



R. J. Wharton
R. J. Wharton is Director of the
Royal Zoological Society of Scot-
land's National Zoological Park,
Muirfield, Edinburgh.

of clarity in the presentation of elementary details. Thus, variety of punctuation symbols is used to describe reaction cross sections never previously explained.

Igneous petrogenesis

Classif

Whereas their ideas on point-set topology were directly derived from the question of when and how an area can be regarded as having been defined in the next chapter, by Joseph Daubert's deal with Cantor's contribution, it is very striking how the immense end, as it seemed to many of his contemporaries outrageous edifice

The last chapter, by Robert Bunnin, deals with the beginnings of research into the foundations of mathematics from Cantor up to the start of the publication of Principia Mathematica in 1910. Thus, Dedekind, Frege; Russell and Peano are covered, but not Brouwer, as his writings did not make a positive contribution (as distinct from a critical one) until 1918. This gives a good idea of an incomplete story, though it must be said that the account of Frege's logic on page 23 makes it seem much too like the

Over half the book is concerned with experimental petrology and the interpretation of phase diagrams. These are dealt with in order of increasing complexity, starting with simple two-component systems, advancing through ternary systems to quaternary systems. There are additional chapters on experimental studies of nature's rocks and on water-bearing systems. This is a valuable compilation and a simplified summary of results not scattered through numerous journals.

John Torney

John Torney is professor of geology at the University of Leicester.

Pigmentation is not merely a problem, it is also a general evolutionary one. The ge-

M. S. Deol
M. S. Deol is reader in genetics at University College, London.

Pesticides are chemical agents used by farmers, foresters, public health authorities and others in controlling pests of crops, animals, and man. While insecticides, fungicides, herbicides and rodenticides have been used since antiquity, the use of synthetic organic compounds has increased since the Second World War, mainly because they reduce labour costs. Most people whose work involves them in pest control, would agree with Professor van den Bosch that "widespread pesticides are an invaluable tool for the farmer. Unfortunately, they are also a curse. Characteristically, they make the farmer's life very serious matter. First, none of them is specific to the pest against which they are applied, and hence their use is bound to affect populations of non-target organisms, some of which are very serious pests. Secondly, very few of them are resistant to natural selection. To make the best use of pesticides, one has to integrate

their use with appropriate cultural and methods of cultivation and biological control. The late Professor Arnold Carlson (University of California) and Dr. John Bock (professor of Entomology at Berkeley, University of California) was the world's leading authority and proponent of integrated control. Therefore what we require must be taken very seriously.

The pesticide Glyphosate is absolutely safe and does not produce any side effects. It is a natural product and encourages the agrochemical industry to support integrated control measures. This technique requires a smaller pesticide input than a system of control based on the use of a few pesticides alone. It is not surprising, then, that the agrochemical industry is not interested in pesticides which produce more activities which reduce the use of pesticides. More seriously, there is a temptation for less scrupulous firms actively to campaign against measures undertaken to support integrated control and mono-culture production of the environment. The case of the United States was no Bob's book a United States campaign to back in the United States. He provides much evidence to show how not only does the chemical industry in that country operate against more scientific methods of control, but also that it is aided and abetted by the United States Department of Agriculture (USDA) and even the President.

Entomological Society of America.

In the first part of the book Professor van den Bosch outlines the scope and content of the problem, which may focus in trying to outwit his insect competitors, whose numbers and genetic plasticity make them such formidable adversaries. He describes "technology's ironic role in enhancing the insects' competitive advantage." He is mainly concerned with the insects' ability to develop resistance to insecticides, and he cannot win unless he applies more sophisticated forms of attack than the blundering pesticide technicians characteristic of much of the world today. The social, economic and environmental costs are already high. During the next 25 years the weight of insecticides used in the United States has increased elevenfold from 500,000 pounds a year to 6,000,000 pounds, yet pre-harvest losses have increased from 7 per cent to 12 per cent in that period. In this part of the book the chemical manufacturers are given a good kicking.

In the second part of the book Professor van den Bosch describes the policies of pest control in the United States. The story he has to tell is a shocking one. His criticisms are shared with the USDA, universities, politicians and the media. He did not believe the United States had the resources which would be required to win the

and organizations who, by promoting the long-term interests of agriculture and the environment, will help solve the problems in the short term. He stresses industry's interfacing with academic research and appointments, and most disturbingly describes how the authority and impartiality of the Environmental Protection Agency (EPA) has been undermined.

It is not possible, too, to relieve in another country to confirm, or deny, where there are accusations, but since they are made by a scientist of great ability and integrity they should be taken very seriously indeed, not least in Britain, where at least some of the problems which afflict the USA are relevant.

Professor van den Bosch's important book is written in a journalistic style and is full of signs of being compiled together in haste. It ends with constructive suggestions on how a more scientific approach could be introduced into pest and pesticide control, through the establishment of a national pest management research institute, monitoring and the adoption of proven integrated control techniques.

N. W. Moore

N. W. Moore is Chief, Advisory Office, at the Nature Conservancy

category I. Onesline from both
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Overall, the book is well
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in number.

John Brudley

*John Brudley is professor of the
istry at the University of Essex.*

P. H. Gosw A Bibliography
compiled by R. D. Freeman and
Douglas Werchauer has been
published by Rowell at £12.00.
The book attempts to provide a com-
plete inventory of all the published
writings - including popular
on the sea-anemone and molluscs
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end - biblical history of the
nineteenth-century natural history
and member of the religious group
called the Brethren.

The casebound edition of
Grubbin's *The Stranger* has
reviewed in the issue of July 2
has been published by Rowell
at £12.00.

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 ample, and this was Aschbacher's
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 Although attempts to discover
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 for over a century, it is only dur-
 the past 25 years that any sys-
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 been made. In the past 10 years
 a specific programme aimed at
 completion has been followed. To
 immense task seems, now, very close
 to completion. Indeed, this work
 out has been the case, with
 Aschbacher's survey of the
 aspects of so this survey of the
 aschbacher is especially significant
 However, group theory has
 has become a broad field, and
 work inaccessible to all other mathe-
 maticians. So, one of the hopes
 this book might be that this re-
 will be reversed.

technical details elsewhere. For non-specialists, to write this book is to stress, not to wish to, to have a basic knowledge of finite group theory, though clearly an excellent library mathematical background would be desirable if he very rarely the account of some very important work.

Aschbacher begins with a discussion of the known simple groups. The simple groups have received recent publicity, perhaps because of the aura of "discovery" they should be regarded as a finite number of exceptions in the universe of known simple groups to which the remainder fall into the infinite families of alternating groups or finite simple Lie groups. This viewpoint is important, it leads to an immediate dichotomy in the classification programme, must show that an abstract simple group first "resembles" and then actually "is" a known group, and on the one hand one has the "objects" where some of the important groups have become names, possibly because of the exceptional nature. On the other hand, the generic situation, where one is looking for good behaviour, is that Aschbacher describes and he discusses both the techniques and the global structure.

known groups, some of which are mutually exclusive. It is, of course, necessary to prove strong results where induction cannot be applied; and then, despite the desired corollaries. Also, he should be warned that some "facts" are approximate, but this is less important in a book where the elegant impact of ideas is essential.

Some of this book was written in the "general" problems room in the classification programme, been solved, and only certain standard form problems remain. Identification problems, most obviously that of groups of the type, have also been solved, except for the final identification of "nearly constructed" group as Fischer-Monster (and so associated uniqueness question). Furthermore, in the work on the Monster, amazing coincidences with moon functions were found, but not explained.

Here, then, is the call of book to the non-specialist. How the student might find his way into the general mathematics picture? The current generation of group theorists is probably not to see.

Michael J. Collins

Michael J. Collins is fellow professor in the mathematics department at the University College, Oxford.

expressed in a number of good examples of interpopulations. It is not possible, it would seem, that we have reached an impasse.

A completely different approach, however, possible in the study of a certain type. If the basic of a trait happens to be a stonier in a man and some other animal, then it is legitimate to assume that the trait in question may not be radically different. If this approach fails to lead to close information regarding the trait and their allelic forms, it provides important clues, pointing in the right direction, and goes a way towards giving us an overview of the situation. It is possible that the study of the development of the genetic of biocompatibility, if it were not for the clues and direction provided by studies on the mouse, we would know very little about the genetic of biocompatibility in man.

This approach is also possible in pigmentation. The biological basis of pigmentation is the same in man and other mammals. The basis has been studied in a number of species, the mouse being the most among them. It has been found to be remarkably similar in all of them. Indeed, pigmentation of the skin of the mouse provides some of the most convincing examples of interpopulations and interbreeding in man. It is therefore reasonable to

The reader will find it a fact stands out prominently large number of pigments cluding virtually all the me) are pleiotropic (that is, the more than one characteris type). Their other charac wide range, some of being embryonic mortality, anemia, obesity, skeletal malformations, abnormal visual organs, and deafness. These must have, for the animal concerned, for the greater extent of the inheritance. In this position in the transmission of these loci, there is possible the view that pigment probably an more than an in effect, which has acquired importance, only because noticeable. This view can be extended to the origin of recessive pigmentations, possibly have acted on the may have existed on the more important functions pigimentary loci.

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Applications close 8th September, 1980.

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